

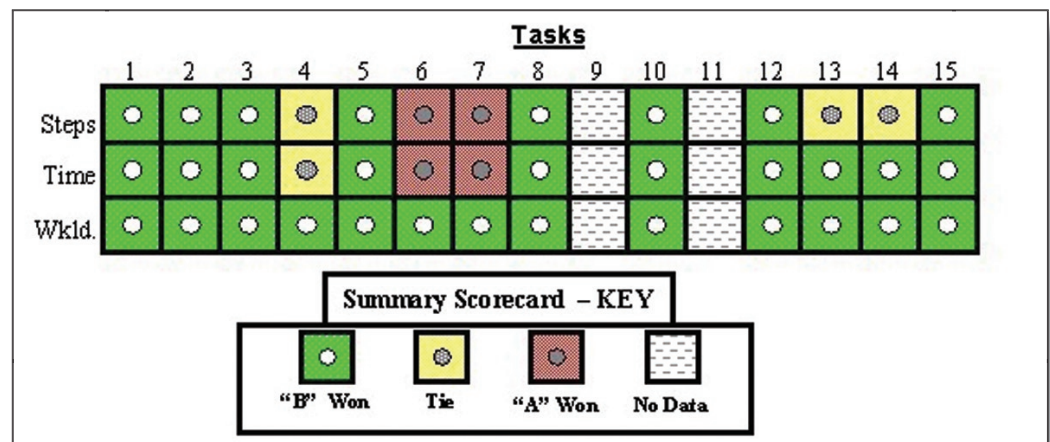


Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

EVALUATION REDUCES RISK FOR AWACS INTERFACE



The Human Effectiveness Directorate developed a better-designed human-machine interface (HMI) to produce a future Airborne Warning And Control System (AWACS) that is more mission effective while minimizing errors.



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Accomplishment

Directorate researchers recently conducted a critical test to help determine the future human-machine interface (HMI) of the Airborne Warning and Control System (AWACS) Block 40/45 aircraft. The directorate's historical strengths in HMI evaluation techniques and tools were vital in producing an evaluation procedure that directly contrasted two interface designs to each other and to the current AWACS Block 30/35 interface design.

The results of the performance evaluation answered critical questions regarding interface vendor selection. This process culminated with the announcement that the Air Force will use Interface B for the AWACS Block 40/45 interface.

Background

There were two main contenders for the AWACS Block 40/45 HMI, referred to here as Interface A and Interface B. Directorate researchers worked closely with the AWACS user community to provide timely input to AWACS Block 40/45 decision makers by designing and conducting the interface evaluation.

The directorate centered the evaluation on the performance and subjective workload associated with 15 common AWACS operator HMI actions. They based the interface comparison on the ease of use for typical AWACS operators' interface tasks.

The results showed that Interface A performance was not improved relative to the current AWACS Block 30/35 interface. In contrast, not only was Interface B substantially improved compared to the AWACS Block 30/35 baseline, it was also much better than the Interface A.

The directorate presented the results of the performance evaluation in the form of a scorecard for easy interpretation of the overall pattern of results. The scorecard (see picture) summarizes Interface B versus Interface A results. Interface B won 79% of the direct comparisons.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-HE-13)